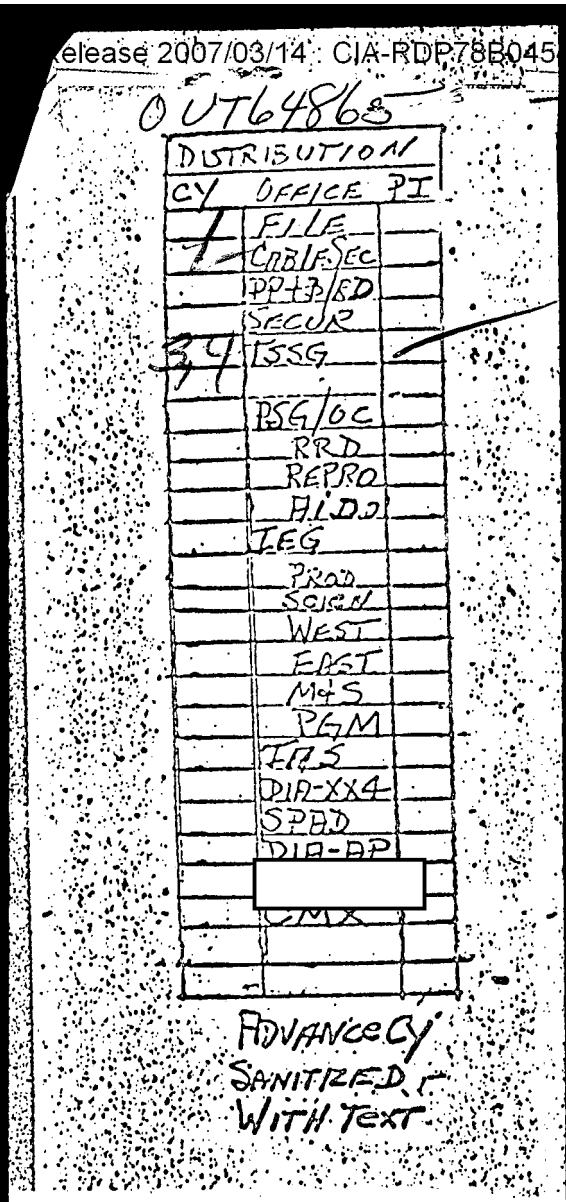

OUT 64865

SECRET PRIORITY

1968 APR 19 03 19Z

P 190244Z
FM NPIC WASHDC
TO [redacted] 25X1
ZEM
S E C R E T CITE NPIC 3518
FOR [redacted] 25X1

IN RESPONSE TO THE NRO REQUIREMENT AS EXPRESSED IN THE 3 APRIL MEMORANDUM FOR THE DIRECTOR, NATIONAL PHOTOGRAPHIC INTERPRETATION CENTER SIGNED BY [redacted] USN, DEPTUTY CHIEF, 25X1
SPECIAL ACTIVITIES OFFICE, DIAXX, NPIC FORWARDS THIS TECHNICAL EVALUATION OF GIANT SCALE MISSION S004:

1. GIANT SCALE MISSION S004 WAS FLOWN ON 10 APRIL 68 AND PROCESSED AT [redacted] EXCEPT FOR THE MATERIAL FROM [redacted] 25X1
[redacted] WHICH WE ASSUME WERE PROCESSED AT BEALE AFB. 25X1
THE MISSION EMPLOYED FIVE OPTICAL SENSORS: A LEFT AND RIGHT TECHNICAL OBJECTIVE (AR AND AL) A LEFT AND RIGHT OPERATIONAL OBJECTIVE (CR AND CL) AND A VERTICAL TERRAIN OBJECTIVE (B). NO USEABLE IMAGERY WAS ACQUIRED FROM THE TERRAIN OBJECTIVE CAMERA DUE TO A SHUTTER MALFUNCTION. ONLY THE TECHNICAL AND OPERATIONAL OBJECTIVE MATERIAL IS EVALUATED IN THIS REPORT. SINCE BAR TARGETS WERE NOT IMAGED ON THE FILM ALL GROUND RESOLUTION FIGURES ARE EMPIRICAL ESTIMATES BASED ON PREVIOUS EVALUATIONS OF SIMILAR SENSORS. THE GROUND RESOLUTION FIGURES IMPLY A BAR PLUS A SPACE, THUS A FIGURE OF [redacted] OBJECT CAN BE DETECTED. 25X1
CLOUDS OBSCURE APPROXIMATELY 40 PERCENT OF THE GROUND IMAGERY.

2. MISSION S004 PROVIDES BETTER OVERALL IMAGE QUALITY THAN MISSION S002 FLOWN ON 25 MARCH AND TECHNICALLY EVALUATED AS REPORTED ON 12 APRIL 68 (CABLE CITE, NPIC 3471). WITH THE EXCEPTION OF THE FILM FROM THE RIGHT OPERATIONAL OBJECTIVE CAMERA. IN ADDITION TO THE 40 PERCENT CLOUD COVER NOTED, HAZE IS A DEGRADING FACTOR ON NEGATIVES ACQUIRED NORTH OF THE DMZ. HAZE IS NOT CONSIDERED A FACTOR SOUTH OF THE DMZ. WHERE ATMOSPHERIC CONDITIONS DO NOT INTERFERE, THE INTERPRETATION SUITABILITY FOR THE MISSION S004 IS CONSIDERED FAIR TO GOOD WHEREAS S002 WAS CONSIDERED FAIR TO POOR FOR THE TECHNICAL OBJECTIVE CAMERA AND GOOD IN ISOLATED INSTANCES FOR THE OPERATIONAL OBJECTIVE CAMERA. THE IMPROVED QUALITY APPEARS DUE MAINLY TO REDUCED ATMOSPHERIC DEGRADATION, GREATER USE OF THE TECHNICAL OBJECTIVE CAMERAS IN THE NEAR VERTICAL POINTING ANGLES, AND IMPROVED EXPOSURE. CONSEQUENTLY MISSION S004 NEGATIVES ARE OF HEAVIER DENSITY AND HIGHER CONTRAST THAN THE NEGATIVES OF MISSION S002. ALL FRAMES EXPOSED FROM THE RIGHT OPERATIONAL OBJECTIVE CAMERA CONTAIN OUT-OF-FOCUS AREAS AS DESCRIBED IN PARA 3 B. 2.

3. THE ORIGINAL NEGATIVES (FIRST GENERATION) AND POSITIVE REPRODUCTIONS (SECOND GENERATION) WERE AVAILABLE FOR THE EVALUATION.

A. TECHNICAL OBJECTIVE CAMERAS: APPROXIMATELY 45 PERCENT OF THE PHOTOGRAPHY IS ACQUIRED ABOVE 30 DEGREES OBLIQUITY APPARENTLY TO INCREASE THE SWATH WIDTH OF THE OPTICAL SENSORS IN THESE AREAS. THE REPRODUCTIONS OF THE LEFT CAMERA PHOTOGRAPHY ARE SATISFACTORY. THE REPRODUCTIONS OF THE RIGHT CAMERA PHOTOGRAPHY ARE SLIGHTLY THIN.

(1) LEFT TECHNICAL OBJECTIVE CAMERA (AR), S/N 64-03: THE GROUND RESOLUTION RANGES FROM GOOD TO POOR. THE BEST GROUND RESOLUTION DETECTED AT NADIR IS ESTIMATED [redacted] 25X1
[redacted] WHERE ATMOSPHERICS ARE NOT A FACTOR. NO ATTEMPT IS 25X1
MADE TO ESTIMATE THE GROUND RESOLUTIONS AT HIGH OBLIQUES SINCE MOST OF THIS IMAGERY IS DEGRADED BY ATMOSPHERICS. THE DENSITY AND CONTRAST OF THE NEGATIVES ARE SLIGHTLY HIGH.

GROUP 1
Excluded from automatic downgrading and declassification

SECRET

THE OBLIQUE FRAMES RANGE FROM SLIGHTLY HEAVY DENSITY IN THE FOREGROUND TO THIN DENSITY IN THE BACKGROUND. THERE ARE NUMEROUS MINUS DENSITY STREAKS PARALLEL TO THE MAJOR AXIS THROUGHOUT THE MISSION, INCLUDING STREAKS SPACED 0.25 INCH APART. EDGE STATIC IS PRESENT ALONG BOTH EDGES OF THE NEGATIVE. TITLE TRANSFER AND SLIGHT LACQUER SMEARING OCCUR INTERMITTENTLY. BANDING IS PRESENT THROUGHOUT THE MISSION. EMULSION SCRATCHES ARE PRESENT IN FRAMES 101, 235, AND 405. EMULSION LIFTS ARE PRESENT IN FRAMES 256, 334, 683, AND 1041. THE DATA BLOCKS OF FRAMES 519 AND 520 ARE PARTIALLY CONTAINED IN THE PRECEDING FORMAT. A LIGHT PLUS DENSITY FOGGED AREA, LOCATED IN THE CENTER OF FORMAT (VARYING FROM 1.5 TO 5 INCHES IN LENGTH AND 0.2 INCH IN WIDTH) OCCURS IN EVERY OTHER FRAME BETWEEN FRAMES 640-662. A CAMERA OFF/ON WITH ASSOCIATED FOGGED AREAS, INDUCED BY MINOR LIGHT LEAKS, OCCURS BETWEEN FRAMES 676/677. FRAME 1094 IS THE LAST TITLED FRAME IN THE LEFT TECHNICAL OBJECTIVE CAMERA MATERIAL.

(2) RIGHT TECHNICAL OBJECTIVE CAMERA (AR), S/N 64-20: THE RESOLUTIONS, DENSITY, CONTRAST, AND FOGGED AREAS ARE THE SAME AS THE LEFT CAMERA. THERE ARE NUMEROUS MINUS DENSITY STREAKS, PARALLEL TO THE MAJOR AXIS, THROUGHOUT THE MISSION. EDGE STATIC IS PRESENT ALONG BOTH EDGES OF THE FILM. BANDING PARALLEL TO THE MINOR AXIS OF THE FILM IS PRESENT THROUGHOUT THE MISSION. TITLE TRANSFER AND SLIGHT LACQUER SMEARING OCCUR INTERMITTENTLY THROUGHOUT THE MISSION. EMULSION SCRATCHES ARE PRESENT IN FRAMES 001, 518, 599, AND 600. EMULSION LIFTS ARE PRESENT IN FRAMES 001, 99, 601, 620, 622, AND 623, 680, 681 AND 685. A CAMERA OFF/ON OCCURS BETWEEN FRAMES 743/744. THE DATA BLOCKS OF FRAMES 587, 588, 589, AND 666 ARE PARTIALLY CONTAINED IN THE PRECEDING FORMATS. THERE IS A WRINKLE PRESENT IN FRAMES 601-616 AND FRAMES 674-786. FRAME 1148 IS THE LAST TITLED FRAME IN THE RIGHT TECHNICAL OBJECTIVE CAMERA MATERIAL.

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B. OPERATIONAL OBJECTIVE CAMERAS: THE OOC MATERIAL PROVIDES GROUND RESOLUTIONS OF [redacted] AT NADIR. THE LEFT OOC PROVIDES THE BETTER RESOLUTIONS AT NADIR [redacted] THE RIGHT OOC APPEARS TO BE DEGRADED AT NADIR (SEE RIGHT OPERATIONAL OBJECTIVE CAMERA COMMENTS). THE DENSITY AND CONTRAST OF THE NEGATIVE ON THE FIRST LEG OF THE MISSION IS TYPICAL OF NEGATIVES ACQUIRED OVER THIS TYPE TERRAIN AT THE SOLAR ELEVATIONS ENCOUNTERED. THE NEGATIVES ON THE SECOND LEG OF THE MISSION ARE DENSE AND APPPEAR GENERALLY OVEREXPOSED.

25X1
25X1

NNNN

(1) LEFT OPERATIONAL OBJECTIVE CAMERA (CL) S/N 4005: THE TIMING DOTS BEGIN 0.75 INCH AFTER THE START OF SCAN AND EXTEND 0.75 INCH BEYOND THE END OF SCAN. FOGGING OF THE FILM, ASSOCIATED WITH ILLUMINATION OF THE DATA CHAMBER, ENCROACHES APPROXIMATELY 0.25 INCH INTO THE IMAGERY BUT THE DEGRADATION IS MINOR. THE EVENTS COUNTER AND THE TITLED FRAME NUMBER ARE IDENTICAL. FRAME 859 IS THE LAST TITLED FRAME OF THE LEFT OPERATIONAL OBJECTIVE CAMERA.

(2) RIGHT OPERATIONAL OBJECTIVE CAMERA (CR) S/N 4002: TIME TIMING DOT AND FOGGED AREA ANOMALIES ARE THE SAME AS THE LEFT CAMERA. THE EVENTS COUNTER AND TITLED FRAME NUMBER ARE IDENTICAL. FRAMES 001, 440, AND 861 CONTAIN FOGGED AREAS ASSOCIATED WITH CAMERA OFF/ON. TITLE TRANSFER IS PRESENT THROUGHOUT THE MISSION. FAINT PLUS

3

AND MINUS DENSITY STREAKS PARALLEL TO THE MAJOR AXIS ARE PRESENT THROUGHOUT THE MISSION BUT DO NOT CAUSE DETECTABLE DEGRADATION TO GROUND IMAGERY. SMALL EMULSION SCRATCHES ARE PRESENT IN FRAMES 481, 493, 503, AND 860. THE FIRST 0.25 INCH OF SCAN (NEAR NADIR END OF FRAME) IS BLURRED AND GENERALLY UNUSEABLE. THE NEXT 1.0 INCH (APPROXIMATELY) OF SCAN IS SERIOUSLY DEGRADED THROUGHOUT THE MISSION. THESE AREAS HAVE AN OUT-OF-FOCUS APPEARANCE. THIS SAME AREA ON FRAMES 230 TO 240 CONTAINS APPARENT IMAGE MOTION AND DOUBLE IMAGERY. FRAME 861 IS THE LAST TITLED FRAME OF THE RIGHT OPERATIONAL OBJECTIVE CAMERA.

4. MISSION RECORDER SYSTEM (MRS) CORRELATION TO FILM:

A. TECHNICAL OBJECTIVE CAMERAS: A GOOD CORRELATION IS OBTAINED BETWEEN THE MRS AND THE LEFT TECHNICAL OBJECTIVE CAMERA. THE 24 HOUR CLOCK CORRELATES WITH THE MRS TIME TO WITHIN TWO SECONDS. THE CORRELATION FOR THE RIGHT TECHNICAL CAMERA IS MARGINAL. THE START OF THE MISSION APPEARS TO CORRELATE WELL; HOWEVER, AT TITLED FRAME 480 THE MRS APPEARS TO HAVE A PLUS FIVE FRAME BIAS. FURTHER INTO THE MISSION (FRAME 650) THE BIAS INCREASES TO PLUS SEVEN FRAMES. THIS SEVEN FRAME BIAS IS APPARENTLY CONSTANT THROUGHOUT THE REMAINDER OF THE MISSION. THE 24 HOUR CLOCK IN THE RIGHT TECHNICAL OBJECTIVE CAMERA MATERIAL IS TWO SECONDS AHEAD OF THE MRS DATA THROUGHOUT THE MISSION. SOME ERRONEOUS DATA IS NOTED IN THE MRS LATITUDE READINGS (EXAMPLE: GMT 062407 AND 062814). TWO LINES OF MRS DATA FOR THE RIGHT TECHNICAL OBJECTIVE CAMERA ARE NUMBERED 643.

B. OPERATIONAL OBJECTIVE CAMERAS: THE OPERATIONAL OBJECTIVE CAMERA APPEARS TO CORRELATE TO WITHIN PLUS OR MINUS ONE FRAME THROUGHOUT THE MISSION. THE 24 HOUR CLOCKS ON BOTH CAMERA RECORDS CORRELATE TO THE MRS TO WITHIN TWO SECONDS THROUGHOUT THE MISSION.

GP-1

S E C R E T

END OF MSG